**General Description**

The Series TY-B, 5.6 K-factor Upright and Pendent Intermediate Level Sprinklers described in this data sheet are automatic sprinklers of the standard response 5 mm frangible bulb type. They are standard spray sprinklers intended for use in fire sprinkler systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on NFPA requirements). Both the Pendent and Upright Sprinklers produce a hemispherical water distribution pattern below the deflector.

Intermediate Level Sprinklers are primarily designed for use in rack storage sprinkler systems where their thermally sensitive elements must be shielded from the water spray of higher elevation sprinklers that could operate earlier during a fire. Intermediate Level Sprinklers are also used in other applications such as beneath open gridded catwalks.

For additional Series TY-B Sprinkler information, see Technical Data Sheet TFP152. For additional Guard and Shield information, see Technical Data Sheet TFP780.

**Sprinkler Identification Numbers**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TY315</td>
<td>Upright 5.6K, 1/2 in. NPT</td>
</tr>
<tr>
<td>TY325</td>
<td>Pendent 5.6K, 1/2 in. NPT</td>
</tr>
</tbody>
</table>

**Technical Data**

**Approvals**

UL and C-UL Listed
FM Approved

*Refer to Table A for complete approval information.*

**Maximum Working Pressure**

175 psi (12.1 bar)
250 psi (17.2 bar)*

* The Maximum Working Pressure of 250 psi (17.2 bar) only applies to the listing by Underwriters Laboratory.

**Discharge Coefficient**

K=5.6 GPM/psi½ (80.6 LPM/bar½)

**Temperature Ratings**

Refer to Table A

**Finishes**

TY-B Sprinkler, Brass; G1/S1 Guard with Shield, Red or Zinc; G1 Guard, Red or Zinc; S2 Shield, Zinc

**Physical Characteristics**

Frame, Bronze; Button, Brass/Copper; Sealing Assembly, Stainless Steel w/TEFLON; Bulb, Glass; Compression Screw, Bronze; Deflector, Copper; G1 and G1/S1 Guard, Painted or Plated Steel; S2 Shield, Plated Steel

**Operation**

The glass bulb contains a fluid which expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass bulb, allowing the sprinkler to activate and water to flow.

**Design Criteria**

The Series TY-B Upright and Pendent Intermediate Level Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on the requirements of NFPA 13, and FM Approval is based on the requirements of FM’s Loss Prevention Data Sheets).
TY-B Sprinkler and G1/S1 Guard with Shield are ordered separately.

Temperature rating is indicated on Deflector.

Pipe thread connections per ISO 7-1 can be provided on special request.

TY-B Sprinkler, G1 Guard, and S2 Shield with O-Ring are ordered separately.

Temperature rating is indicated on Deflector.

Pipe thread connections per ISO 7-1 can be provided on special request.

TY-B Sprinkler, G1 Guard, and S2 Shield with O-Ring are ordered separately.

Temperature rating is indicated on Deflector.

Pipe thread connections per ISO 7-1 can be provided on special request.
### TABLE A

**LABORATORY LISTINGS AND APPROVALS**

<table>
<thead>
<tr>
<th>K</th>
<th>TYPE</th>
<th>TEMP.</th>
<th>BULB LIQUID</th>
<th>SPRINKLER FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UPRIGHT (TY315) with Guard/ Shield (G1/S1)</td>
<td>135°F (57°C)</td>
<td>Orange</td>
<td>NATURAL BRASS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>155°F (68°C)</td>
<td>Red</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>175°F (79°C)</td>
<td>Yellow</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>200°F (93°C)</td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>286°F (141°C)</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>360°F (182°C)</td>
<td>Mauve</td>
<td>1, 2</td>
</tr>
<tr>
<td>5.6</td>
<td>PENDENT (TY325) with Guard/ Shield (G1/S2) or Shield only (S2)</td>
<td>135°F (57°C)</td>
<td>Orange</td>
<td></td>
</tr>
<tr>
<td>1/2 in. NPT</td>
<td></td>
<td>155°F (68°C)</td>
<td>Red</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>175°F (79°C)</td>
<td>Yellow</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>200°F (93°C)</td>
<td>Green</td>
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</tr>
<tr>
<td></td>
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<td>286°F (141°C)</td>
<td>Blue</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>360°F (182°C)</td>
<td>Mauve</td>
<td>1, 2</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Listed by Underwriters Laboratories, Inc. (UL)
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL)
3. Approved by Factory Mutual Research Corporation (FM)

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**FIGURE 4**

*Installation Procedures for Model G1 Guard and S2 Shield (Pendent Sprinkler) and Model G1/S1 Guard with Shield (Upright Sprinkler)*
Installation

The Series TY-B, 5.6 K-factor Upright and Pendent Intermediate Level Sprinklers must be installed in accordance with this section.

General Instructions
Do not install any bulb type sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontally, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 in. (1.6 mm) for the 135°F (57°C) to 3/32 in. (2.4 mm) for the 360°F (182°C) temperature ratings.

A leak tight 1/2 in. NPT sprinkler joint should be obtained with a torque of 7 to 14 lb-ft (9,5 to 19,0 N·m). Higher levels of torque may distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

Upright Sprinklers
The Series TY-B Intermediate Level Upright Sprinklers must be installed in accordance with the following instructions.

Step 1. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 2. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 5). With reference to Figure 1, the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

Step 3. Mount the Model G1/S1 Guard with Shield on the sprinkler. With the Clips loose, spread the two halves of the Sprinkler Guard enough to pass by the sprinkler deflector from the side.

Step 4. Spread the two halves of the Sprinkler Base Plate enough to pass over the sprinkler Thread Relief portion of the sprinkler. (Ref. Figure 1)

Step 5. With the Sprinkler Guard positioned on the Thread Relief portion of the sprinkler, engage the Bars with Clips from opposing Guard Halves, then slide the Clips down until they are seated against the Base Plates, completing the installation as shown in Figures 1 and 4.

NOTE: To help assist with the sliding of the Clips, use the Guard Installation Tool as shown in Figure 4. Additionally, pliers can be used to facilitate the final seating of the Clips.

NOTICE

The Clips must seat against the Base Plates to be fully seated in order to complete the installation. The Model G1/S1 Guard with Shield may be located in any position relative to the sprinkler frame arms.

Pendent Sprinklers
The Series TY-B Intermediate Level Pendent Sprinklers must be installed in accordance with the following instructions.

Step A. Thread the S2 Shield on to the sprinkler threads with the stamped markings toward the deflector and just to the end of the threads. The final assembly step is easier to accomplish if the Shield is not disengaged by continuing to turn the Shield past the threads.

Step B. Roll the O-Ring over the sprinkler threads until it seats against the Shield.

Step C. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step D. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 5). With reference to Figures 2 or 3, the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

Step E. Rotate the S2 Shield clockwise (looking up) so that it slightly compresses the O-Ring between the Shield and sprinkler fitting.

Note: Installation of the S2 Shield only is completed at this point (Ref. Figure 3). If installing a G1 Guard, proceed to the next step.

Step F. Mount the Model G1 Guard on the sprinkler. With the Clips loose, spread the two halves of the Sprinkler Guard enough to pass by the sprinkler deflector from the side.

Step G. Spread the two halves of the Sprinkler Base Plate enough to pass over the sprinkler Thread Relief portion of the sprinkler. (Ref. Figure 2)

Step H. With the Sprinkler Guard positioned on the Thread Relief portion of the sprinkler, engage the Bars with Clips from opposing Guard Halves, then slide the Clips up until they are seated against the Base Plates, completing the installation as shown in Figures 2 and 4.

NOTE: To help assist with the sliding of the Clips, use the Guard Installation Tool as shown in Figure 4. Additionally, pliers can be used to facilitate the final seating of the Clips.

NOTICE

The Clips must seat against the Base Plates to be fully seated in order to complete the installation. The Model G1 Guard may be located in any position relative to the sprinkler frame arms.
Care and Maintenance
The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be painted, plated, coated or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

Care must be exercised to avoid dam-age to the sprinklers -before, during, and after installation. Sprinklers dam-aged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. (Ref. Installation Section)

Limited Warranty
For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure
Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Series TY-B Intermediate Sprinklers are comprised of separately ordered components: Sprinkler, Guard, and/or Shield.

Upright Sprinkler Assemblies with NPT Thread Connections
Specify: Series TY-B Upright Intermediate Level Sprinkler, TY315, K=5.6, Standard Response, (specify) temperature rating, (specify) finish, P/N (specify from Table B)

Pendent Sprinkler Assemblies with NPT Thread Connections
Specify: Series TY-B Pendent Sprinkler, TY325, K=5.6, Standard Response, (specify) temperature rating, (specify) finish, P/N (specify from Table B)

Model G1/S1 Guard with Shield
Specify: Model G1/S1 Sprinkler Guard with Shield, (specify) finish, P/N (specify):
- Red Painted .................. 56-938-1-001
- Zinc Chromate .............. 56-938-9-001

Model G1 Sprinkler Guard
Specify: Model G1 Sprinkler Guard, (specify) finish, P/N (specify):
- Red Painted .................. 56-938-1-066
- Zinc Chromate .............. 56-938-9-066

Model S2 Pendent Shield with O-Ring
Specify: Model S2 Pendent Shield with O-Ring, 1/2 in. NPT, Series TY-B Pendent Sprinklers, P/N 56-070-9-332

Sprinkler Wrench
Specify: W-Type 6 Sprinkler Wrench, P/N 56-000-6-387

Additional Guard Installation Tools
Specify: Guard Installation Tool for Model G1 Sprinkler Guards, P/N 56-000-8-597

* The Guard Installation Tool is included with orders in original carton quantities.